Abstract of the Disclosure

An apparatus for and a method of heat-treating a wafer for use in producing a semiconductor device ensures a desired distribution of surface temperatures across the wafer. Spacers are used to space the wafer above a heat transfer plate. The spacers can be used to adjust the spacing and inclination of the wafer relative to the heat transfer plate by predetermined amounts determined in advance to produce the desired distribution of surface temperatures across the wafer during heat-treatment. With the present invention, wafers can be heat-treated during production using a plurality of bake units disposed in parallel because each of the bake units can be precisely adjusted using the spacers to produce surface temperature distributions similar to a standard surface temperature distribution. Accordingly, the productivity of the semiconductor manufacturing process can be markedly enhanced.